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| EXAMINER |
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DEL SOLE, JOSEPH S

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| ART UNIT | PAPER NUMBER |
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1722

DATE MAILED: 12/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,658

Applicant(s)

WATANABE ET AL.

Examiner

Joseph S. Del Sole

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3 and 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 1 and 2 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** indication of traverse in Paper No. 6.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 5/26/2000. It is noted, however, that a copy of the certified copy of the Japanese application has not been included in the file by the International Bureau. It is noted that the FORM PCT/DO/EO/903 (371 Acceptance Notice) acknowledges the receipt of the priority document.

Information Disclosure Statement

3. The information disclosure statement filed 1/2/02 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP 609. It has been placed in the application file and the information referred to therein has been considered as to its merits.

Drawings

4. Figure 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (as stated at lines 24-25 of page 8 of the specification, "Fig 7 is a... diagram of the prior... apparatus."). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

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7. The abstract of the disclosure is objected to because **a)** the abstract is currently more than one paragraph and over 150 words (also, should the apparatus claims be allowed and the non-elected claims be cancelled, the abstract should be rewritten to summarize only the apparatus). Correction is required. See MPEP § 608.01(b).

Claim Objections

8. Claim 3 is objected to because of the following informalities: **a)** at line 9 of claim 3 "wherein;" should be changed to -- wherein: -- to be grammatically clearer.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Brown (3,502,752).

Brown teaches an apparatus (Fig 3) for manufacturing tubing (the limitation "stiffness-taper" is a product limitation depending on the material manufactured and the process of manufacturing, and does not further limit the structure of the apparatus) having a die (Fig 3, #45) having an extrusion hole (Fig 3, #46), a die holder (Fig 3, #40) for holding the die, and a mandrel (Fig 3, #42) which is mounted inside the die holder and fits in the extrusion hole (Fig 3); a plurality of resin-supply ports (Fig 3, #s 48 and 51) that are formed in the die holder (the limitations "which forms stiffness-taper tubing

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by switching between and supplying resins having different stiffness over said mandrel” and “such that the stiffness gradually changes in the lengthwise direction” are process limitations depending on the material manufactured and the process of manufacturing, and does not further limit the structure of the apparatus) and wherein: a mandrel insertion hole (Fig 3, #41) that connects to the extrusion hole is formed in the die holder and the mandrel is mounted in this mandrel insertion hole, and the plurality of resin-supply ports open up to a cylindrical space that is formed between the inner surface of the mandrel insertion hole and the outer surface of the mandrel at a position that is separated from the extrusion hole in the die, and the plurality of resins flow together in this cylindrical space.

11. Claim 3 is rejected under 35 U.S.C. 102(b) as being anticipated by Meneidis (3,642,396).

Meneidis teaches an apparatus (Fig 4) for manufacturing tubing (the limitation “stiffness-taper” is a product limitation depending on the material manufactured and the process of manufacturing, and does not further limit the structure of the apparatus) having a die (Fig 4, #26) having an extrusion hole (Fig 4), a die holder (Fig 4, #s 39, 17 and 11) for holding the die (the die is held to the die holder by #s 27 and 15), and a mandrel (Fig 4, #14) which is mounted inside the die holder and fits in the extrusion hole (Fig 4); a plurality of resin-supply ports (Fig 4, #41 and the transmitter to #22) that are formed in the die holder (the limitations “which forms stiffness-taper tubing by switching between and supplying resins having different stiffness over said mandrel” and “such that the stiffness gradually changes in the lengthwise direction” are process limitations

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depending on the material manufactured and the process of manufacturing, and does not further limit the structure of the apparatus) and wherein: a mandrel insertion hole (Fig 4, #22) that connects to the extrusion hole is formed in the die holder and the mandrel is mounted in this mandrel insertion hole, and the plurality of resin-supply ports open up to a cylindrical space that is formed between the inner surface of the mandrel insertion hole and the outer surface of the mandrel at a position that is separated from the extrusion hole in the die, and the plurality of resins flow together in this cylindrical space.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burlis et al (3,752,617) in view of Clanton et al (5,843,503).

Burlis et al teach an apparatus (Fig 1) for manufacturing tubing (the limitation "stiffness-taper" is a product limitation depending on the material manufactured and the process of manufacturing, and does not further limit the structure of the apparatus) having a die (Fig 2, the portion of #18 represented by #33 having diverging bore #34) having an extrusion hole (Fig 1, #34), a die holder (Fig 2, #18 and col 3, lines 31-42) integral with the die, and a mandrel (Fig 2, #38) which is mounted inside the die holder (Fig 2, at #40) and fits in the extrusion hole (Fig 2); a plurality of resin-supply ports (Fig 2, #s 41 and 42) that are formed in the die holder (the limitations "which forms stiffness-taper tubing by switching between and supplying resins having different stiffness over said mandrel" and "such that the stiffness gradually changes in the lengthwise direction" are process limitations depending on the material manufactured and the process of manufacturing, and does not further limit the structure of the apparatus) and wherein: a mandrel insertion hole (Fig 2) that connects to the extrusion hole is formed in the die holder and the mandrel is mounted in this mandrel insertion hole, and the plurality of resin-supply ports open up to a cylindrical space that is formed between the inner

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surface of the mandrel insertion hole and the outer surface of the mandrel at a position that is separated from the extrusion hole in the die, and the plurality of resins flow together in this cylindrical space.

Burlis et al fail to teach the die separate from the die holder such that the die holder is for holding the die.

Clanton et al teaches a die holder (Fig 2, the holder surrounding and holding #s 28 and 30) combined with a separate die (Fig 2, #30) having an extrusion hole wherein the die holder holds the die for the purpose of being able to separate the die from the die holder to so that the die can be easily cleaned or to change the attributes of the die to accommodate different extrudate characteristics (col 5, lines 36-50).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Burlis with a die separate from and held by a die holder as taught by Clanton et al because it enables the die to be removed for cleaning or to be replaced with a die having different attributes to accommodate different extrudates.

16. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burlis et al (3,752,617) and Clanton et al (5,843,503) and further in view of Colby et al (5,318,357).

Burlis et al and Clanton et al teach the apparatus as discussed above.

Burlis et al fail to teach the mandrel being a multi-thread screw that is formed such that the screw grooves are divided up at a plurality of positions by forming threads,

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that form the screw grooves, that stop part way and new threads start at an adjacent offset position.

Colby et al teach a mandrel (Figs 1 and 5, #10) being a multi-thread screw that is formed such that the screw grooves are divided up at a plurality of positions by forming threads (Figs 1 and 5, #20), that form the screw grooves, that stop part way and new threads start at an adjacent offset position for the purpose of creating a shearing and tumbling, mixing action to improve homogeneity (col 2, lines 5-8).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Burlis et al with a mandrel being a multi-thread screw that is formed such that the screw grooves are divided up at a plurality of positions by forming threads, that form the screw grooves, that stop part way and new threads start at an adjacent offset position as taught by Colby et al because it creates a shearing and tumbling action to improve mixing.

17. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burlis et al (3,752,617) and Clanton et al (5,843,503) and further in view of Hanslik (3,913,897).

Burlis et al and Clanton et al teach the apparatus as discussed above.

Burlis et al fail to teach the mandrel being a multi-thread screw that is formed such that the screw grooves are divided up at a plurality of positions by forming threads, that form the screw grooves, that stop part way and new threads start at an adjacent offset position.

Hanslik teaches a mandrel (Fig 1, #1) being a multi-thread screw that is formed such that the screw grooves are divided up at a plurality of positions by forming threads

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(Fig 1, including #s 7a and 6b), that form the screw grooves, that stop part way and new threads start at an adjacent offset position for the purpose of intermittently reversing the gradient of the pressure differential to establish a more uniform pressure distribution (col 1, lines 60-67).

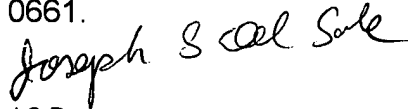
It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Burlis et al with a mandrel being a multi-thread screw that is formed such that the screw grooves are divided up at a plurality of positions by forming threads, that form the screw grooves, that stop part way and new threads start at an adjacent offset position as taught by Hanslik because it establishes a more uniform pressure distribution.

Correspondence

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Joseph S. Del Sole whose telephone number is (571) 272-1130. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Wanda Walker, can be reached at (571) 272-1151. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for both non-after finals and for after finals.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



J.S.D.

December 19, 2003